CLAIMS

What is claimed is:

1. A method of exchanging information between a control element (CE) and one or more forwarding element (FEs), the method comprising:

executing a binding phase to provide a data channel between the CE and a first one of the FEs, the data channel to transport packets including at least one of redirected packets from the first one of the FEs to the CE and packets to be forwarded from the CE to a second one of the FEs, the binding phase further to provide a control channel between the CE and the first one of the FEs, the control channel to transport control and configuration messages and wherein said control channel is separate from said data channel;

executing a capability discovery phase between the CE and the first one of the FEs; and

executing a configuration operation phase between the CE and the first one of the FEs.

2. The method of claim 1 further comprising executing an unbind phase between the CE and the first one of the FEs.

3. The method of claim 1 wherein said executing a binding phase further comprises transmitting a bind request from the first one of the FEs to the CE.

4. The method of claim 3 wherein said executing a binding phase further comprises transmitting a bind response from the CE to the first one of the FEs after the first one of the FEs has received said bind request.

5. The method of claim 1 wherein said executing a capability discovery phase comprises at least one of transmitting a capability request from the CE to the first one of the FEs, transmitting a topology request from the CE to the first one of the FEs, and transmitting a start FE operation message from the CE to the first one of the FEs.

6. The method of claim 5 wherein said executing a capability discovery phase further comprises at least one of transmitting a capability response from said the first one of the FEs to said CE after the first one of the FEs has received said capability request, and transmitting a topology response from the first one of the FEs to the CE after the first one of the FEs has received said topology request.

7. The method of claim 1 wherein said executing a configuration operation phase comprises at least one of transmitting a configuration request from the CE to the first one of the FEs, and transmitting a query request from the CE to the first one of the FEs.

8. The method of claim 7 wherein said executing a configuration operation phase further comprises at least one of transmitting a configuration response from the first one of the FEs to the CE after the first one of the FEs has received said configuration request, transmitting a query response from the first one of the FEs to the CE after the first one of the FEs has received said query request, transmitting an FE event notification message from the first one of the FEs to the CE and transmitting an FE packet redirection message from the first one of the FEs to the CE.

9. The method of claim 1 wherein said messages are provided having an eight-byte header.

10. The method of claim 1 wherein said messages are provided having a variable length payload.

11. A network element module comprising:

a control element (CE);

a plurality of forwarding elements (FEs); and

an interconnect in communication with said CE and said plurality of FEs and wherein communication across said interconnect between the CE and the FE is accomplished by executing instructions machine result in the following:

executing a binding phase to provide a data channel between the CE and a first one of the FEs, the data channel to transport packets including at least one of redirected packets from the first one of the FEs to the CE and packets to be forwarded from the CE to a secnd one of the FEs, the binding phase further to provide a control channel between the CE and the first one of the FEs, the control channel to transport control and configuration messages and wherein said control channel is separate from said data channel;

executing a capability discovery phase between the CE and the first one of the FEs; and

executing a configuration operation phase between the CE and the first one of the FEs.

12. The network element module of claim 11 wherein said communication further comprises executing an unbinding phase between the CE and the first one of the FEs.

13. The network element module of claim 11 wherein said binding phase further comprises a bind request sent from the first one of the FEs to the CE.

14. The network element module of claim 13 wherein said binding phase further comprises a bind response sent from the CE to the first one of the FEs after the first one of the FEs has received said bind request.

15. The network element module of claim 11 wherein said capability discovery phase comprises at least one of a capability request sent from the CE to the first one of the FEs, a topology request sent from the CE to the first one of the FEs, and a start FE operation message sent from the CE to the first one of the FEs.

16. The network element module of claim 15 wherein said capability discovery phase further comprises at least one of a capability response sent from said first one of the FEs to said CE after the first one of the FEs has received said capability request, and a topology response sent from the first one of the FEs to the CE after the first one of the FEs has received said topology request.

17. The network element module of claim 11 wherein said configuration operation phase comprises at least one of a configuration request sent from the CE to the first one of the FEs, and a query request sent from the CE to the first one of the FEs.

18. The network element module of claim 17 wherein said configuration operation phase further comprises at least one of a configuration response sent from the first one of the FEs to the CE after the first one of the FEs has received said configuration request, a query response sent from the first one of the FEs to the CE after the first one of the FEs has received said query request, an FE event notification message sent from the first one of the FEs to the CE and an FE Packet redirection message sent from the first one of the FEs to the CE.

19. The network element module of claim 11 wherein said messages are provided having an eight-byte header.

20. The network element module of claim 11 wherein said messages are provided having a variable length payload.

21. An article comprising:

a storage medium having stored thereon instructions that when executed by a machine result in the following:

executing a binding phase to provide a data channel between the CE and a first one of the FEs, the data channel to transport packets including at least one of redirected packets from the first one of the FEs to the CE and packets to be forwarded from the CE to a second one of the FEs, the binding phase further to provide a control channel between the CE and the first one of the FEs, the control channel to transport control and configuration messages and wherein said control channel is separate from said data channel;

executing a capability discovery phase between the CE and the first one of the FEs; and

executing a configuration operation phase between the CE and the first one of the FEs.

22. The article of claim 21 further comprising instructions for causing a processor to execute an unbind phase between the CE and the first one of the FEs.

23. The article of claim 21 further comprising instructions for causing a processor to transmit a bind request from the first one of the FEs to the CE.

24. The article of claim 23 further comprising instructions for causing a processor to transmit a bind response from the CE to the first one of the FEs after the first one of the FEs has received said bind request.

25. The article of claim 21 further comprising instructions for causing a processor to execute at least one of transmit a capability request from the CE to the first one of the FEs, transmit a topology request from the CE to the first one of the FEs, and transmit a start FE operation message from the CE to the first one of the FEs.

26. The article of claim 25 further comprising instructions for causing a processor to execute at least one of transmit a capability response from said first one of the FEs to said CE after the first one of the FEs has received said capability request, and transmit a topology response from the first one of the FEs to the CE after the first one of the FEs has received said topology request.

27. The article of claim 21 further comprising instructions for causing a processor to execute at least one of transmit a configuration request from the CE to the first one of the FEs, and transmit a query request from the CE to the first one of the FEs.

28. The article of claim 27 further comprising instructions for causing a processor to execute at least one of transmit a configuration response from the first one of the FEs to the CE after the first one of the FEs has received said configuration request, transmit a query response from the first one of the FEs to the CE after the first one of the FEs has received said query request, transmit an FE event notification message from the first one of the FEs to the CE and transmit an FE Packet redirection message from the first one of the FEs to the CE.

29. The article of claim 21 further comprising instructions for causing a processor to provide said messages having an eight byte header.

30. The article of claim 21 further comprising instructions for causing a processor to provide said messages having a variable length payload.